



**UNITED STATES DEPARTMENT OF COMMERCE**  
**Patent and Trademark Office**

Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO. <b>AD</b>
-----------------	-------------	----------------------	-------------------------------

EXAMINER
----------

ART UNIT	PAPER NUMBER
----------	--------------

DATE MAILED:

**1/4/00**

**4**

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademark

# Office Action Summary

Application No.  
09/321,715

Applicant(s)

Takemura Etal.

Examiner

Yung A. Lin

Group Art Unit  
2822



☒ Responsive to communication(s) filed on May 28, 1999

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

## Disposition of Claim

☒ Claim(s) 1-93 is/are pending in the applicat

Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration

☐ Claim(s) \_\_\_\_\_ is/are allowed.

☒ Claim(s) 1-93 is/are rejected.

☐ Claim(s) \_\_\_\_\_ is/are objected to.

☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.

## Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some\* ☒ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 3

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

Art Unit: 2822

## **DETAILED ACTION**

### ***Drawings***

1. Figure 2 (A)-2 (D) should be designated by a legend such as --Prior Art-- because only the which is old is illustrated. See MPEP § 608.02(g).

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 27, 35, 43, 72, 80, and 88 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 27, 35, 43, 72, 80, and 88, line 2, the phrase "top gate type thin film transistor" is not clear. The applicants failed to explain the detail of "top gate type thin film transistor" in specification.

### ***Claim Rejections - 35 USC § 103***

Art Unit: 2822

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-26, 28-34, 36-42, 44-71, 73-79, 81-87, and 89-93 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki et al (U.S. Patent 5,485,019) in view of Fu et al. (U.S. Patent 4,305,200).

Yamazaki et al. discloses a method of manufacturing a semiconductor device comprising the step of: forming an amorphous silicon film 1103 with a thickness of 750 Angstrom over silicon oxide layer 1102 and non-alkali glass (Col. 19, line 66-67; and Col. 20, line 23-28); crystallizing the amorphous silicon film 1103 by annealing at the temperature range of 500-650°C (Col. 20, line 25-28); oxidizing the crystallized silicon film to convert to silicon oxide film in order to have very good characteristic (Col. 20, line 46-49); forming a gate insulating film of silicon oxide 1105 adjacent to the crystallized film 1103 (Col. 42-43); forming a gate electrode 1106 adjacent to the gate insulating film 1105 (Col. 20, line 58-61). Yamazaki et al. also discloses the semiconductor device comprises an active matrix liquid-crystal electro-optical device (Col. 1, line 19-20).

Yamazaki et al. does not disclose the condition of oxidizing is performed at a pressure higher than 1 atm.

Art Unit: 2822

Fu et al. disclose that completely oxidizing a polysilicon film 21 to silicon oxide in an oxidizing atmosphere of oxygen and steam at a total pressure of bigger than more atmosphere and temperature less than  $900^{\circ}\text{C}$  (Col. 2, line 34- 43; and Fig. 1-3).

It would have been obvious to one of ordinary skill in the art at the time invention was made to utilize the oxidization method of Fu et al. to oxidize the polysilicon film to silicon oxide film in order to obtain very good characteristic of oxide film.

Art Unit: 2822

***Conclusion***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yung A. Lin whose telephone number is (703) 305-0244. The examiner can normally be reached on Monday through Friday from 8:30 a.m. to 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead, can be reached on (703) 308-4940. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-3432.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

YL

December 21, 1999

  
**Carl Whitehead, Jr.**  
**Supervisory Patent Examiner**  
**Technology Center 2800**